

Remarks

Claims 1–18 and 29–55 are pending in this application. Claims 19–28 have been cancelled. Claims 1–18 have been amended to make editorial changes and to address the examiners objections. New claims 29–55 have been added to more specifically claim the invention. No new matter has been added. The new and amended claims are fully supported by the specification.

The specification has been amended to address the examiner's objections. However, applicants note that full citations for Alexandrescu 2003 and Rohmund 2002 were provided in paragraph 5 of the application.

Section 103 Rejection

Claims 1–18 were rejected under section 103 as being unpatentable over U.S. patent 6,756,026 (Colbert) in view of U.S. patent 6,110,291 (Haruta). Reconsideration of the rejection and allowance of the claims are respectfully requested.

No Suggestion to Combine Colbert and Haruta

There is no suggestion that Colbert and Haruta should be combined. These references are very dissimilar. Colbert discusses a method of growing carbon fiber from single carbon nanotube molecular arrays. Colbert applies heat to only a growing tip of a fiber. See column 26, lines 35–38. Haruta discusses forming thin films (completely unlike carbon fibers) by using laser ablation (using multiple laser beams) of a solid target to form a gaseous precursor material (“plumes”).

Colbert and Haruta teach away from each other. At column 26, lines 35–38, Colbert states that “the only heat supplied for the growth reaction should be focused at the growing tip of the fiber.” And at column 26, lines 34–36, Colbert states “it is not necessary or preferred to preheat the carbon feedstock gas, since unwanted pyrolysis at the reactor walls can be minimize thereby.” The Colbert approach discourages heating more than just a fiber tip and is completely the opposite of Haruta’s approach of laser ablating a target to form a gaseous precursor material.

Therefore, there is no motivation to combine these references, especially in the way the examiner suggests. The examiner has not made a *prima facie* case of obviousness. For at least this reason, the claims should be allowable.

Combination Falls Short

Even if Colbert were combined with Haruta, and there is no suggestion to do this for the reason stated above, the combination will still fall short of invention as recited in the claim.

The combination of Colbert and Haruta would be to apply multiple laser beams to a growing tip of a fiber. The combination of Colbert and Haruta do not show or suggest each and every limitation each claim.

Claim 1

Claim 1 recites “a radiating-energy source, positioned above the stage *to locally heat the catalyst on at least one die via simultaneously emitted multiple prongs of radiating energy.*” The cited references, considered individually or in combination, do not show or suggest locally heating the catalyst on at least one die. As discussed above, the cited references do not show or suggest heating of a die of a workpiece. The invention provides a technique for enhancing the manufacturability of nanostructure-based devices not provided by the prior art. For at least this additional reason, claim 1 should be allowable.

Claims 2–18 are dependent on claim 1 and should be allowable for at least similar reasons as claim 1. These claims recite additional limitations which further distinguish the invention over the prior art.

For example, claim 6 recites that the radiating energy source includes “*focused infrared.*” The cited references do not show or suggest the use of focused infrared radiation. Claim 6 should be allowable for this additional reason.

Claim 15 recites “the stage includes a *stage temperature-control unit for helping to control a temperature of a workpiece.*” As discussed above, Colbert discusses only heating the growing tip. Any other heating or cooling is discouraged. Claim 15 should be allowable for this additional reason.

Claim 16 recites “the stage temperature-control unit *cools the workpiece to a temperature in a range from an equilibrium room temperature to –250 degrees centigrade.*” Nowhere do the prior art references show or suggest this feature of the invention. Claim 16 should be allowable for this additional reason.

Claim 17 recites “the stage temperature-control unit *heats the workpiece to a temperature in a range from an equilibrium room temperature to 1200 degrees centigrade.*” Nowhere do the

prior art references show or suggest this feature of the invention. Claim 17 should be allowable for this additional reason.

Conclusion

For the above reasons, applicants believe all claims now pending in this application are in condition for allowance. Applicants respectfully request that a timely Notice of Allowance be issued in this case. If the examiner believes a telephone conference would expedite prosecution of this application, please contact the signee.

Respectfully submitted,

Aka Chan LLP

/Melvin D. Chan/

Melvin D. Chan
Reg. No. 39,626

Aka Chan LLP
900 Lafayette Street, Suite 710
Santa Clara, CA 95050
Tel: (408) 701-0035
Fax: (408) 608-1599
E-mail: mel@akachanlaw.com